
PROPERTIES OF THE MONOPOLE EXCITED STATES OF EVEN-EVEN NUCLEI

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New the most complete compilation of data on properties of monopole excited ($0+$) states of even-even nuclei is presented. The existent theoretical notions about their structure and the properties of E0-transitions are analysed. In the light, closed-shell, spherical, deformed and transitional nuclei the main modes of nuclear motion forming both the lowlying $0+$ states and giant monopole resonances are selected. The typical results of calculations obtained within collective and microscopic models as well as qualitative considerations concerning the nature of these states based on the systematics are given. For the description of the E0-transition intensity the single-particle estimate and model-independent sum rule are used. The special attention is paid to the anomalies shown in decay properties of the monopole states and their physical treatment.